COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION
AT RICHMOND, MAY 31, 2001

APPLICATION OF

APPALACHIAN POWER COMPANY CASE NO. PUE970766

For certificates of public convenience and necessity authorizing transmission lines in the Counties of Bland, Botetourt, Craig, Giles, Montgomery, Roanoke and Tazewell: Wyoming-Cloverdale 765 kV Transmission Line and Cloverdale 500 kV Bus Extension

ORDER GRANTING AUTHORITY TO CONSTRUCT TRANSMISSION FACILITIES

Background

Before the Commission is the application of Appalachian Power Company ("AEP-Virginia" or "the Company") for certificates of public convenience and necessity authorizing the construction and operation of the Virginia portion of a 765 kV transmission line. The transmission line, as proposed in the application filed on September 30, 1997, would originate at the Company's Wyoming Station, near Oceana, West Virginia, and terminate at the Company's Cloverdale Station in Botetourt County, Virginia ("Cloverdale Project"). The Company also applied for a certificate authorizing construction in Botetourt County of a 500 kV bus extension from its existing Cloverdale Station 765 kV switchyard to the existing Cloverdale Station 345 kV switchyard. By Order for Notice and Hearing of November 7, 1997, the

Commission docketed the application and directed publication of the proposed and alternate routes for the Cloverdale Project.[1]

On September 15, 1998, the Commission Staff filed a Motion for Ruling Directing Study of Alternative Route, requesting that the Company be directed to study alternative 765 kV transmission lines that would originate at the Wyoming Station, and terminate at the Company's Jackson's Ferry Station in Wythe County, Virginia. On September 22, 1998, the Examiner directed AEP-Virginia to study such alternative routes and file a report regarding these alternatives with the Commission.

On May 7, 1999, the Company filed a report identifying a preferred route and a number of alternative corridors that would extend to the Jackson's Ferry Station. The proposed Wyoming-Jackson's Ferry alternative corridors cross the Counties of Tazewell, Bland, Pulaski, Wythe, and Giles. The Hearing Examiner preferred route, which we approve in this Order, as modified by conditions we impose herein, is referred to as the "Jackson's Ferry Project."

On June 1, 1999, the Examiner issued a Ruling directing the Company to publish notice of the alternative Jackson's Ferry corridors, and establishing a new procedural schedule.[2]

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[1] In its application filed September 30, 1997, AEP-Virginia proposed a Preferred Corridor for a Wyoming-Cloverdale transmission line and five Alternative Corridors for various segments of the route. The Preferred Corridor and the five Alternative Corridors are described in detail in the Commission's Order for Notice and Hearing of November 7, 1997.

[2] On October 14, 1999, a new procedural schedule was established, continuing the evidentiary hearing to commence May 1, 2000.

The Hearing Examiner presided at local hearings in the following locations: Bland (April 14, 1998, and July 13, 1999), Christiansburg (March 26, 1998), Max Meadows (July 22, 1999), Pearisburg (April 21, 1998), Pulaski (July 15, 1999), Tazewell (March 24, 1998, and July 20, 1999), and Vinton (April 23, 1998). Over 500 witnesses with a variety of backgrounds and interests testified. Further hearings for the receipt of testimony from the Company, the Commission Staff, and experts of several protestants (i.e., parties other than the applicant) were held in Richmond on May 1-5 and 10, 2000.

At the May 2000 hearings, AEP-Virginia maintained that the Cloverdale Project proposed in this proceeding was the best solution to the need for additional capacity to maintain adequate reliability of service. Nevertheless, the Company stated that the Jackson's Ferry Project was acceptable, and that the route for the project is "for all practical purposes the more realistically feasible project" and "clearly preferable from an environmental perspective."[3]

The Report of Hearing Examiner Howard P. Anderson, Jr. (hereinafter "Report") was filed on October 2, 2000. The Hearing Examiner recommended approval of the Jackson's Ferry Project. He also recommended granting the application for authorization to construct the Cloverdale bus extension.[4]

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[3] Tr. at 3674.

[4] In the Report's findings and recommendations, the Examiner erroneously referred in finding 4 to a 765 kV bus line. The bus voltage is 500 kV.

Comments on the Report were filed by the Company and the following protestants: Alliance for the Protection and Preservation of Appalachian Land, Inc., Bland County Board of Supervisors, Citizens Organized for the Preservation of the Environment of Giles County, Citizens United to Protect Tazewell County, Friends of Regional Culture and Environment, Giles County Board of Supervisors, Greater Newport Rural Historic District, and the Town of Bluefield.

The Prior Proceeding

The application now before the Commission was preceded by Case No. PUE910050, which commenced in 1991. In that proceeding, AEP-Virginia applied for certificates to construct a Wyoming-Cloverdale 765 kV transmission line along a different route that would have crossed Giles, Craig, Roanoke, and Botetourt Counties. In his Report filed December 2, 1993, Hearing Examiner Howard P. Anderson, Jr., recommended that the application be granted. The Commission made preliminary findings in our Interim Order of December 13, 1995, 1995 S.C.C. Ann. Rep. 260, 260-61. The Commission found that there was a significant need for additional transmission resources in the Company's Virginia service territory and, considering the record and the statutory criteria, that the proposed transmission line appeared to be the most reasonable means of meeting the need. We also found that the Company's proposed route might be environmentally acceptable, with mitigation measures. We did not make, however, the specific findings mandated by § 56-46.1

of the Code of Virginia. We directed the Company to make additional studies of the route. We also directed studies of other transmission improvements and regulatory developments that might have affected the need for the proposed line. Id. at 266-67.

In 1997, the Company simultaneously filed the application now before the Commission and moved for leave to withdraw its application docketed as Case No. PUE910050. The Company identified two developments that led it to withdraw the 1991 application and to file a second application using another route. (Application of AEP-Virginia, Vol. I at 3) First, AEP-Virginia stated that Congress had directed a study of a segment of the New River for possible addition to the National Wild and Scenic River System. The route proposed in Case No. PUE910050 would have crossed the New River in the segment under study, and the Company determined that the crossing was foreclosed. In addition, the U.S. Forest Service and other federal agencies released on June 18, 1996, a draft environmental impact statement addressing the 1991 route. Preparation of the draft statement was part of the process of approving the crossing of federal lands and the New River. The draft statement raised a number of issues and suggested that the proposed route through federal lands would not be approved. These developments led the Company to reconsider the project. The Commission dismissed the 1991 application in its Order Granting Leave to Withdraw and Dismissing Application of November 7, 1997, in Case No. PUE910050, 1997 S.C.C. Ann. Rep. 327.

The Proposed Projects in this Proceeding

AEP-Virginia's Cloverdale Project identified in its 1997 application would affect the Counties of Bland, Botetourt, Craig, Giles, Montgomery, Roanoke, and Tazewell, Virginia. The Cloverdale Project would extend for a distance of approximately 132 miles in the preferred corridor in Virginia and West Virginia with approximately 100.4 miles in Virginia. Approval of alternate corridors identified in the public notice could lengthen the proposed transmission line.

We also considered the Jackson's Ferry Project that was based on studies conducted by a consultant who assisted Staff in investigating the need for the proposed transmission line.[5] The Jackson's Ferry Project would extend for approximately 90 miles from the Wyoming Station in West Virginia to the Company's Jackson's Ferry Station in Virginia. Approximately 57.1 miles of the corridor are in Virginia. The preferred and alternate corridors for this Project identified in the public notice would cross the Counties of Tazewell, Bland, Pulaski, Wythe, and Giles.

For either project, the transmission line would consist of a single three-phase 765 kV circuit supported by a combination

[5] An independent consulting firm, KEMA Consulting, Inc., ("KEMA"), conducted a twenty-four month investigation examining the power supply situation in southwestern Virginia, and the Company's proposed 765 kV transmission line and numerous alternatives. The Consultants' assessment of the need for the proposed facilities ("KEMA Report"), prepared by Principal Investigators Richard A. Wakefield and P. Jeffrey Palermo, is Attachment No. 2, to Mr. Palermo's testimony marked Exhibit PJP-13. As part of the KEMA study, Wayne D. McCoy conducted a review of the environmental impact of the projects. Ex. WDM-28.

of self-supporting and guyed-V lattice galvanized steel towers. The line would require four to five towers per mile with an average tower height of 132 feet. The line would require a 200-foot wide right-of-way.

Discussion

In reviewing the Company's application, we must decide, pursuant to § 56-265.2 A of the Code of Virginia, whether the public convenience and necessity requires the construction of either Company's proposed 765 kV transmission line or the alternative line to the Jackson's Ferry Station. More specifically, § 56-265.2 A of the Code of Virginia provides that it shall be unlawful for any public utility to construct facilities for use in public utility service without first having obtained a certificate from the Commission that the public convenience and necessity requires the exercise of such right or privilege. Section 56-265.2 A also provides that a certificate for overhead electrical transmission lines of 150 kilovolts or more shall be issued by the Commission only after compliance with the provisions of § 56-46.1.

Section 56-46.1 A provides that:

> Whenever the Commission is required to approve the construction of any electrical utility facility, it shall give consideration to the effect of that facility on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact. In such proceedings it shall receive and give consideration to all reports that

> relate to the proposed facility by state agencies concerned with environmental protection . . . . Additionally, the Commission (i) may consider the effect of the proposed facility on economic development within the Commonwealth and (ii) shall consider any improvements in service reliability that may result from the construction of such facility.

Section 56-46.1 B provides, in relevant part, that, "[a]s a condition to approval the Commission shall determine that the line is needed and that the corridor or route that the line is to follow will reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned."

Our review of the Company's application requires us to consider and weigh the factors set forth in §§ 56-265.2 and 56-46.1 of the Code, factors that are, to a large extent, interrelated and overlapping. While we discuss the statutory criteria below on an individual basis, we emphasize that each criterion is also considered as a part of the whole, in light of all the relevant statutory criteria and with regard to other concerns raised by the parties and public witnesses. We have examined the degree of need and the impact of failing to meet that need, and reviewed alternative responses to it. These alternatives included, among others, a demand side management plan; the purchase of power from sources that would require fewer or no additional transmission resources; additional generation in the service territory provided by AEP-Virginia or others; construction of one or more lower voltage lines in lieu

of the 765 kV line; and combinations of these and other alternatives. In determining whether a 765 kV transmission line should be approved, we have considered and weighed the competing considerations of need and of the various ways it might be addressed, including the proposed route, the impact on the environment, and other criteria provided by the statutes.

Based on consideration of the Report, the comments, the extensive record developed in this proceeding, and the relevant statutes, we have concluded that the construction of the Jackson's Ferry Project is required by the public convenience and necessity. We are approving the same type of facility as that proposed by the Company, a 765 kV transmission line; however, compared with the proposed Cloverdale Project, the Jackson's Ferry Project traverses a shorter route and has a significantly reduced impact on the environment. The route we approve includes the five modifications identified in the Hearing Examiner's Report, at 31-32. We also find that AEP-Virginia's request for authority to construct the proposed 500 kV bus extension at the Company's Cloverdale Station is required by the public convenience and necessity, and we authorize the construction of that facility.

The Commission recognizes that this has been a protracted and highly contested proceeding. There has been substantial and understandable opposition to the Company’s proposal to build a 765 kV transmission line, both the Cloverdale Project that was proposed by the Company, and the alternative Jackson's Ferry Project, recommended by Staff. The opponents’ concerns primarily

relate to the proposed transmission line's potential impact on the environment. We have taken these concerns very seriously, both in our consideration of the application and the implementation of our decision. We studied the entire record carefully. In evaluating the Jackson's Ferry Project, we reviewed testimony, exhibits, briefs, and comments; moreover, we examined maps in detail and members of the Commission viewed the Project by ground and air.[6] Further, the Commission has conditioned its approval of AEP-Virginia's application on the Company's commitment to implement measures to protect the environment during construction of the line and throughout its service life. We expect AEP-Virginia to make a concerted effort to implement the mitigation measures developed in the record and identified below. We also will require our Staff to monitor the Company's efforts and report to the Commission on the Company's progress.

We will not, in this Order, discuss each alternative and all of the concerns raised by each party. We will, however, provide the basis for our decision and comment on certain issues.

Need for Transmission Line

The first fundamental question is whether additional capacity is needed to serve southwestern Virginia reliably. The

[6] The Commission conducted a similar review of the 765 kV transmission line proposed by the Company in the prior proceeding, discussed supra.

Hearing Examiner found that "there is a critical need for enhancement of the transmission system in the Company's Virginia service territory and that construction of a 765 kV transmission line is the best solution."[7] He stated that an independent analysis revealed that the existing transmission system in southwestern Virginia is seriously overloaded and does not meet industry reliability standards.[8] He observed that since the last major reinforcement to the Company's transmission system in southwestern Virginia was completed in 1973, there have been no additional "backbone" transmission lines added in that area; however, the demand on the transmission system has increased by 136%. The Examiner added that the demand is forecasted to increase at 2.2% per year in the foreseeable future. He further found that the studies showing 32 different contingencies that violate the single or double contingency criteria are "clear and compelling evidence that the current situation is critical and must be addressed promptly."[9]

We agree with the Examiner that immediate action is necessary to ensure that reliability is not diminished, and AEP-Virginia's transmission system in southwestern Virginia requires reinforcement.

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[7] Report at 24.

[8] Specifically, the Examiner is referring to the national reliability standards of the North American Electric Reliability Council ("NERC") and the reliability standards of the regional reliability council in which AEP is located, the East Central Area Reliability Coordination Agreement ("ECAR"). Report at 24, n. 138.

[9] Report at 24.

As stated above, KEMA assisted Staff in evaluating the power supply situation in southwestern Virginia, and assessing whether the proposed transmission line is needed.[10] The KEMA Report explained that although the Company currently has sufficient generating capacity to meet its supply obligations, over the long term, it will increasingly rely on new capacity sources of its own or of others. The KEMA Report further explained that to the extent such sources are located outside Virginia, additional loading will be placed on critical elements of the Company's transmission system.[11]

In discussing the current power supply situation in southwestern Virginia, the KEMA Report stated that peak customer load in the winter of 1998-1999 exceeded the capacity available from local resources by approximately 1,700 MW, and the shortage is expected to increase to over 2,500 MW by the winter of 2002-2003. The KEMA Report further stated that as the load in southwestern Virginia continues to grow, so will the region's dependence on imported power from the Ohio River Valley. KEMA explained that the reliable delivery of such imports depends on the Company's interconnections, especially the interconnections to AEP's main transmission system.[12] The KEMA Report found that the AEP-Virginia's transmission system in Virginia currently is

[10] See supra n. 5.

[11] KEMA Report at 1.

[12] Id. at 5. AEP-Virginia is one of seven operating companies of the American Electric Power Company, Inc. ("AEP"), a multi-state public utility corporation.

not meeting national and regional electric power reliability standards, and the Company's customers already face an unacceptably high risk of service interruption. KEMA predicted that system overloading will become significantly worse over the next few years. It stated that the "consequences of not addressing this issue could be as severe as a complete system collapse affecting southwestern Virginia and surrounding regions."[13]

The Giles County Board of Supervisors, Citizens Organized for the Preservation of the Environment of Giles County, and the Greater Newport Rural Historic District Committee (collectively, "Commentors") argue that the need for enhancing the Company's transmission system is much less pressing than the Examiner's Report suggests. Relying on the testimony of the witness sponsored by Giles County, William Lewis, the Commentors state that conditions depicted by the Company's load flow simulations (predicting outages in the winter of 2002-2003 in a variety of scenarios involving concurrent outages of two major transmission lines) have never occurred and cannot occur. The Commentors cite Mr. Lewis' testimony in which he asserted that the icing outage scenario is fundamentally improbable because during periods of peak load, icing would cause the distribution lines to fail first, and this failure of the distribution lines and the resulting localized outages would reduce the peak. The Commentors also cite Mr. Lewis' testimony that icing occurs at

[13] KEMA Report at 14.

temperatures too high to result in peak demand, since, in winter, demand is inversely related to temperature. Based on this, the Commentors contend that because icing is the most likely cause of the double contingency outages modeled by the Company, and icing does not occur -- and cannot occur -- during periods of peak load, the Company's model upon which it bases its case for transmission reinforcement is inherently flawed and is not reasonable. The Commentors assert that there is no reason why the Cloverdale Project should be favored over the Jackson's Ferry Project since both transmission lines would function identically, except in the worst case scenario that postulates an icing-caused outage that, according to the Commentors, has not occurred and probably never will occur.

In essence, the Commentors' argument was presented to support their conclusion that the Cloverdale Project was not superior to the Jackson's Ferry Project.[14] We address this matter because if their argument were correct, it could lead to the conclusion that the need for transmission reinforcement is not as great as determined by the Examiner. We do not agree with the Commentors that the double contingency outages modeled by the Company "essentially cannot occur."[15] The Commentors assume in their analysis of the icing scenario that weather conditions are uniform across both the areas traversed by the lines and the

[14] The Commentors state "crediting Lewis' testimony necessarily calls into question the need for reinforcement; but, in all candor, does not disprove the company's need case." Commentors Comments to Report at 4.

[15] Id. at 3.

areas served by them; that is, icing occurs throughout the area or it does not. However, if load areas experience extremely cold weather with snow and thus have peak conditions, but in another area where transmission lines are located, the temperature is higher such that icing occurs, it is quite possible that the icing would cause the transmission lines to fail. Such failure would result in the loss of electricity in the load areas where the distribution lines did not fail. In addition, as noted in Company witness Pasternack's rebuttal testimony, the collapse of one or more extra high voltage ("EHV") lines in a region could take days or weeks to repair. Occurrence of extreme cold weather during the interim period necessary for restoration of the EHV lines could produce a scenario very close to the double contingency studied by the Company. It is also important to note that some of the heaviest loadings on the Company's transmission system occur during shoulder peak load periods due to such factors as the pumping load requirements of the Smith Mountain and nearby Bath County pumped storage plants. Therefore, it is quite possible that icing and peak transmission loadings may coincide.

Further, the Company is required to operate its system reliably and to adhere to national (NERC's) and regional (ECAR's) industry criteria, and these criteria require that power systems must be able to withstand probable, as well as less probable, credible contingencies. The Company did not select its testing criteria based on a specific high probability of occurrences; instead, the Company selected contingency

scenarios that were possible and would serve as proxies for a broad range of possible events.[16] We do not agree with the Commentors' conclusion that the need for the 765 kV line is overstated by the Company's analysis.

As part of determining whether there is a need for transmission reinforcement, we also have considered, as provided in § 56-46.1 of the Code of Virginia, whether the construction of a 765 kV transmission line will result in any improvements in service reliability that may result from the construction of such facility, and whether it will have a positive effect on economic development within the Commonwealth. As discussed above, the AEP-Virginia transmission system currently is not meeting national and regional reliability standards; over the long term, additional loading will be placed on critical elements of the transmission system, further reducing the system's ability to meet established reliability criteria. Either the Cloverdale Project or the Jackson's Ferry Project would significantly increase transfer capability within Virginia, as well as increase interregional transfer capability, and thus would improve service reliability throughout the state. It is also apparent that if southwestern Virginia does not have adequate and reliable power supplies in coming years, inevitably that area's economy would be adversely affected. Although the majority of public witnesses were opposed to the construction of any transmission line in southwestern Virginia, as the Examiner

[16] KEMA Report at 11-14.

noted, several public witnesses associated with business and municipal groups in that area supported the proposed transmission line as necessary to sustain existing businesses and to foster future economic growth.[17]

We now turn to the issue of whether a 765 kV transmission line is the best alternative of all of the options, or combinations of options, that have been proposed. The Hearing Examiner discussed several options that were suggested, including building additional generation, other transmission alternatives, the construction of a second 345 kV transmission line, the conversion or upgrade of existing 138 kV transmission facilities or corridors, new transmission technology, demand side management, purchased power, and distributed generation.[18] He concluded that there is "no viable, cost effective alternative or combination of alternatives."[19]

Certain parties contend in their comments that the Examiner failed to consider other alternatives, or combination of alternatives, that would delay or possibly eliminate the need for a 765 kV transmission line. The Board of Supervisors of Bland County and Citizens United to Protect Tazewell County ("Protestants") and the Alliance for the Preservation and Protection of Appalachian Land, Inc. ("APPAL") assert that the Hearing Examiner considered each option in a vacuum, rather than

[17] See Report at 9-12.

[18] See id. at 16-24.

[19] Id. at 24.

considering the best combination of available resources to meet the local area energy needs. The Protestants assert that the Company's computer modeling is inadequate because it avoided analysis of several areas that could have delayed the need to construct the proposed line. They contend that the modeling failed to include, for example, new generation and purchased power as at least a partial solution, and improperly modeled the Smith Mountain hydro facility at zero MW of capacity.

APPAL asserts that the Examiner erroneously considered the Smith Mountain hydro facility's generation as a single substitute, but in fact APPAL's witness had recommended that the Smith Mountain generation be considered in conjunction with other identified options. APPAL argues that the Examiner erred in dismissing generation as a viable option because limited gas supplies would render the generation alternative more expensive than the cost of a 765 kV line. Specifically, APPAL cited the Examiner's statement that the least cost generation alternatives would include the addition of 1,200 MW of gas-fired combustion turbines ("CTs") at the Matt Funk 345 kV bus, but the gas supply in the area would support only about 600 MW of CT generation. APPAL counters that a company of AEP's size and power could have additional gas supplies brought into the area. APPAL asserts that the Examiner's preoccupation with the relative costs of the options reinforces the public perception that the well-being of

the Company is more important than the well-being of the public.[20]

Further, APPAL asserts that AEP has made no documented effort to investigate the available and firm contract availability of gas; thus, there is no basis for the Examiner's concern about the uncertainty of gas supplies. APPAL also takes issue with the Examiner's comment that, if capacity is added in the future, it may not be located in an area that is a cost-effective site. APPAL contends that no one has conducted any load flow analyses to study the impact of capacity additions, and it is imprudent and premature to dismiss the effect of AEP system and non-AEP system generation without having conducted such studies.[21]

We disagree with APPAL and the Protestants that combinations of options have not been sufficiently considered. Further, while cost must be a factor in the consideration of alternatives, it is, by no means, the sole factor. It was not so for the Hearing Examiner, and it is not for us. The KEMA Report discussed certain combinations of alternatives that could be viable solutions. It also identified the positive and negative aspects of these combinations.

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[20] See APPAL Comments on Report at 4.

[21] APPAL agrees that the cost of a generation alternative would be higher but retorts that the rate impact would be negligible if the Company's figures at the hearing are used. Moreover, APPAL states, if independent power producers ("IPPs") were to build new generation, the Company would not have to bear the capital or maintenance costs of such construction and could simply augment supplies through purchased power arrangements. APPAL Comments on Report at 2.

With respect to APPAL's arguments concerning the generation alternative involving the addition of 600 MW of generation at the Matt Funk 345 Station in combination with the Company's acquisition of additional capacity as needed, KEMA determined that the initial capital cost of this generation option would be approximately twice the capital cost of the 765 kV line reinforcement options, and an additional capital investment of approximately $58 million each year thereafter would be necessary to meet future load growth.[22] KEMA opined that the higher cost of this alternative makes it less attractive than the construction of either of the proposed 765 kV transmission lines.[23] Moreover, KEMA stated that all generation alternatives share the problem that it is not clear where new generation will be located, when it will be built, or by whom.[24]

Staff witness Walker elaborated on this point. He explained that with the deregulation of generation in Virginia, the Company will continue to have an obligation to provide service to customers who do not or cannot otherwise choose a competitive supplier, but may no longer have an obligation to construct generating facilities to ensure that adequate power supplies are available.[25] The Company could choose to meet its

[22] KEMA Report at 50-51.

[23] Id. at 51.

[24] Id. at 52.

[25] Ex. CDW-6 at 9-11. The Virginia Electric Utility Restructuring Act has been amended since Mr. Walker testified. We do not decide here whether a distributor, as a default service provider, may be required to construct generation if necessary.

needs through purchases in the wholesale market. However, Mr. Walker stated, reliance on the competitive market to locate and construct generation so as to eliminate the need for the proposed transmission line could pose unacceptable reliability risks to the Company's customers. He pointed out that there is no guarantee that merchant plants will be built in southwestern Virginia in light of the relative lack of infrastructure that would be needed to support such generation.[26] Staff witness Walker also stated that the construction of significant amounts of generation in a specific area could impose additional environmental compliance costs such as increased emission control equipment, which may make building generating facilities in southwestern Virginia even less attractive to entrepreneurs. He observed that it may be unrealistic to assume that a significant amount of generation could be built in southwestern Virginia because air permitting requirements and water supply problems could effectively limit the level of viable generation that could be constructed within an area the size of AEP-Virginia's eastern service territory.[27]

Moreover, Staff witness Walker stated, even if entrepreneurs do build generating facilities in southwestern Virginia, such units would not, in and of themselves, eliminate the need for the proposed line because such units would have to be dispatched at certain times and from certain locations to

[26] Id. at 9-11.

[27] Id. at 7, 10.

relieve overloading on the transmission system.[28] Even assuming that entrepreneurs were to build generating facilities at effective sites, Mr. Walker explained that, in order to ensure the availability of such facilities, AEP-Virginia would have to enter into what in effect would be "must run" contracts, which could be as expensive, if not more expensive, than the alternative where the Company constructs generation to meet load growth.[29]

As stated, APPAL expresses concern that the cost of the alternatives is the driving factor in this case. We acknowledge that cost is, and should be, a factor; it is not, however, the sole consideration. We should not require the Company to take action that is not economically prudent for the Company or the Commonwealth, and might not be beneficial for its customers. This is especially true here where reliance on additional generation could impose unacceptable reliability risks, as explained by Staff witness Walker. Finally, while there is an environmental cost to building transmission lines, there is also such a cost for the construction of power plants and the transmission lines and associated equipment to connect them to the transmission system. Each alternative would impact the environment.

[28] For a discussion of the importance of locating generating facilities in the most effective way from a transmission perspective, see KEMA Report at 49-50.

[29] Ex. CDW-6 at 10-11.

Another example of a combination of options that has been considered is KEMA's observation that the needs of southwestern Virginia could conceivably be met by a combination of new generation and lower-voltage transmission alternatives. According to KEMA's analysis, the most reasonable such option would be the addition of a second Kanawha River-Matt Funk 345 kV circuit in combination with the addition of 680 MW of new generation at the Matt Funk 345 kV Station. KEMA estimated that this combination would provide enough capacity to meet the region's need roughly through the winter of 2008-2009, and each year thereafter either additional generation or additional transmission construction would be required.[30] KEMA stated that the cost and environmental impact of a second Kanawha River-Matt Funk 345 kV line would be about the same as those of the Jackson's Ferry Project; however, the 765 kV alternative would provide "far greater improvement in capability and would meet the needs of the region for many more years than any 345 kV option."[31] A second Kanawha River-Matt Funk 345 kV circuit would meet the Company's needs though the winter of 2002/2003. The additional 680 MW of generating capacity installed at the Matt Funk Station would satisfy expected needs in the region for approximately five years,[32] while the Cloverdale Project would

[30] KEMA Report at 52-53.

[31] Id. at 53.

[32] Id. at n.23.

meet the regional needs for 11 to 17 years.[33] The Jackson's Ferry Project would provide adequate service for at least 7 to 11 years based on a 1998 load forecast.[34] Further, using more updated data, Giles County witness William Lewis determined that the Jackson's Ferry Project could be in service for up to 15 years before needing additional reinforcement.[35]

Upon consideration of the evidence relative to combinations of options as a solution, we are persuaded that it would be unrealistic and risky to rely on any generation alternative that assumes that adequate power supplies will be available when and where the Company would need it to relieve critical transmission facilities. The evidence shows that, considering all of the criteria, including the impact on the environment, none of the alternatives or combinations of suggested alternatives, including those discussed above, attain as satisfactory of a balance of the factors that must be considered as the 765 kV transmission line.

We will address the assertion reiterated in some of the comments that the Company is seeking to build the proposed line for its own benefit to enable it to increase future off-system sales. For example, APPAL stated in its Comments on the Report that the Hearing Examiner failed to document the assertions made by the Company that projected load growth in AEP-Virginia's

[33] Id. at 22-23, 30.

[34] Id. at 31-32.

[35] Tr. at 3015-3017.

Central/Eastern area is tied to need in the affected counties, and asserted that the "line is proposed for a need that . . . has little or nothing to do with the citizens whose lives will be impacted."[36]

We disagree. While some portion of the capacity resulting from the addition of the transmission line can undoubtedly be used in making off-system sales, the evidence shows that currently there is a local need for transmission reinforcement, which will only increase in the future. AEP-Virginia has a statutory obligation to provide reliable electric service to customers in its service territory. In light of this obligation, as well as the many other factors discussed herein, we have determined that the transmission line we approve herein will be essential to ensure that customers in Virginia will receive reliable service.

Finally, we will comment on APPAL's assertion that the Examiner failed to consider the impact and the role of the emerging regional transmission organization ("RTO") as the proper vehicle to address long range regional planning.[37] We have considered this factor and conclude that it does not change our decision. The RTO's primary function is to manage the transmission system efficiently; the creation of an RTO does not add transmission capacity. In fact, because an RTO has the potential of moving electric power across the grid more

[36] Comments of APPAL on Report at 1.

[37] Id. at 3.

efficiently, it could result in significantly increasing the number of wholesale transactions across AEP-Virginia's system, and increased use of the transmission system could offset efficiencies gained by the RTO's operation of the system. We cannot rely on the creation of an RTO to solve the transmission needs of southwestern Virginia.

The Jackson's Ferry Project

We agree with the Examiner's conclusion that the Jackson's Ferry Project will best meet the need for additional capacity to maintain adequate reliability of service in southwestern Virginia. As part of our determination, we have considered and weighed all of the relevant factors, including the need to maintain adequate reliability, the impact on the environment, and relative costs.

The Commission is well aware of the fact that either project would pass through areas with sensitive environmental resources. In balancing these factors between the two proposed projects, we find that the Jackson's Ferry Project would have a lesser adverse environmental impact and also would sufficiently meet the need for additional capacity. Among other factors, the route for the Jackson's Ferry Project is significantly shorter in Virginia than the Cloverdale Project route and affects fewer homes. Like the Cloverdale Project, the Jackson's Ferry Project would improve service reliability to customers in southwestern Virginia and support economic development in the Commonwealth.

In their Comments on the Report at 2, 3-6, the Protestants contend that alternate route segments to the preferred Wyoming-Cloverdale corridor identified in the Company's application were not fully considered. The Protestants criticize the Hearing Examiner for failing to consider a route identified as WJFE-9. The Protestants also fault the Examiner for not considering errors in the Company's environmental analysis. But for these errors, the Protestants seem to suggest, a route generally avoiding Bland County would have been considered.

The Protestants' Comments suggest a route north of the New River through Giles and Montgomery Counties. The added length of the line, the impact on more homes, the impact on existing historic districts, and other adverse impacts raise numerous obstacles to such a route. The record does not establish or indicate that the WJFE-9 route is superior to the published routes.

APPAL, in its Comments at 8-9, also contends that the consideration of route alternatives was flawed. APPAL argued that the proposed route for the Jackson's Ferry Station was influenced by the route approved by the West Virginia Public Service Commission for the line originating at Wyoming and continuing to the West Virginia-Virginia boundary.

We find that the record demonstrates that the Jackson's Ferry route was influenced by a number of other factors, including the decision of Congress to designate additional segments of the New River for study as a national scenic river. The Jackson's Ferry route will have a reduced total impact on

the George Washington and Jefferson National Forests; further, it is the most direct route to the Jackson's Ferry Station. These and other factors, not simply the West Virginia Public Service Commission's action, led to the route recommended by the Examiner and now approved by the Commission.

The Environmental Impact

As discussed above, §§ 56-265.2 and 56-46.1 of the Code of Virginia, impose upon the Commission the obligation, in reviewing applications for a certificate to construct transmission facilities of 150 kV or more, to consider potential adverse impacts of the proposed line on the environment.[38] If a line is to be constructed, we are to "establish such conditions as may be desirable or necessary to minimize adverse environmental impact." Section 56-46.1. That provision also directs the Commission to "receive and give consideration to all reports that relate to the proposed facility by state agencies concerned with environmental protection." Id. Additionally, § 56-46.1 B provides, among other things, that the Commission may not approve an application to construct an overhead electric transmission line of 150 kV or more unless the Commission determines that the proposed line is needed and that the line's corridor or route will "reasonably minimize adverse impact on

[38] Section 56-46.1 D provides that the term “environment” or “environmental” means "historic," as well as a "consideration of the probable effects of the line on the health and safety of the persons in the area concerned."

the scenic assets, historic districts and environment of the area concerned."

In determining whether to approve the 765 kV line, we have considered all statutory criteria, including need and the alternatives to meet that need, and the impact of those alternatives on the environment. We conclude, based on the record, that the Jackson's Ferry Project should be approved. Further, we find that the construction of the Jackson's Ferry Project will reasonably minimize any adverse impact on the scenic assets, historic districts, and the environment of the area. In reaching this determination, members of the Commission viewed the impacted areas and examined the extensive record developed in this proceeding, including the transcripts of the public hearings, and considered all comments and briefs.

With respect to the testimony of public witnesses and certain parties, it is readily apparent that residents along the possible routes have a strong attachment to the land that would be affected by the Project. In their testimony before the Hearing Examiner, many spoke of generations of a family living and working on particular farms. Their words by themselves conveyed the strong attachments the witnesses have. In addition to individuals' testimony, the study sponsored by Protestant witnesses John Dodson and Denise Smith documented the particular attachments to the land of the residents of the Dry Fork community in Bland County.[39] Further, Protestant witness Melinda

[39] Ex. DS-46 and Ex. JD-47.

Bolar Wagner collected additional expressions of attachment to particular farms and communities and of continuous habitation in her study of cultural attachment of residents of Bland and Wythe Counties.

The Commission disagrees with the Hearing Examiner's conclusions on bias in Ms. Wagner's study.[40] We give weight to the study's conclusions that residents of the two counties, especially the Dry Fork and Walker's Creek communities, have individual and communal ties to particular pieces of land. We accept her conclusion that these residents have "emotional, economic, and social connections to their surrounding landscapes."[41]

In addition to their attachment to the land, those living along the proposed routes expressed deep concern over the intrusion of the towers and conductors into the rural landscape. They were joined in these expressions of concern by those who might have views of the line or might encounter the line as they travel through the affected communities.

The Commission has considered carefully these and other expressions of concern about the line. As noted earlier, members of the Commission personally inspected much of the route on the ground, and one Commissioner viewed the routes from the air. Reading statements made at the hearing, reviewing the statements and interviews collected in the Wagner and Dodson and Smith

[40] Report at 41.

[41] Ex. MBW-48 at 92.

studies, and our viewing of the route give us some insight into the concerns of these people. We have been mindful of these concerns as we have discharged our responsibility to consider the impact of the line on the environment, and to approve the route that, on balance, minimizes adverse environmental impact.

Unfortunately, any of the alternatives we have considered would have undesirable impacts that may, in some individual instances, be significant. Nevertheless, the record demonstrates clearly the potential negative consequences of failing to take appropriate action. We must make a decision that inevitably and regrettably will have some negative impact. As discussed above, we have determined that of the feasible alternatives, the Jackson's Ferry route, on balance, would have the least negative impact.

We have considered the residents of all areas that would be impacted by this line and the alternatives, including the Bland County communities of Dry Fork and Walker's Creek. Members of the Commission visited these communities, among others. We saw first hand the potential impacts where the proposed line would cross the mountain's face. While APPAL suggested in its Comments that participation in the process was in vain, the Commission values all expressions of views and efforts to provide information.

The route selected takes advantage, whenever possible, of the contours of the land to mask the line from view. For example, the line will be constructed between hills or behind ridges to avoid views from roads and homes whenever possible. As

we discuss later, the Commission will direct its Staff to approve the placement of supporting structures to assure that views are preserved, as far as possible. To further reduce visual intrusion, the Commission will direct the Company to use, as proposed, nonreflecting conductors and subdued colors for tower structures.

We also direct AEP-Virginia to use the six-bundle configuration of conductors to reduce noise. While APPAL, in its Comments at 5 and 8, sees little value in this configuration, Company testimony identified this bundle design as a measure that may reduce the impact of the line. As noted in the Report, the Examiner found less noise with this configuration.[42]

- *Consideration of Reports From State Agencies*

In enacting § 56-46.1 of the Code of Virginia, the General Assembly directed the Commission to receive and consider reports from state agencies on the impact of a proposed transmission line. Virginia environmental agencies contributed to the record before us in two ways. First, the agencies assisted the Company and the Staff. Staff consultant Wayne D. McCoy and Company witness Leonard Simutis referred in their testimony to reports, maps, and other information obtained from their several meetings with representatives of these agencies. The resources of the agencies were made available to these experts, which contributed

[42] Report at 33.

to the record before the Commission. In addition to assisting the Staff and AEP-Virginia, a number of agencies participated in the coordinated review led by the Department of Environmental Quality. The agencies prepared for the Commission's consideration extensive reports on both the prior case and in this case. The Commission has considered these reports and supporting testimony offered by the agencies.

With regard to the reports of these state agencies, the Protestants argue, in their Comments at 7-8, that the Examiner ignored a letter from David G. Brickley, the Director of the Department of Conservation and Recreation. According to the Protestants, Mr. Brickley recommended that the line avoid Skydusky Hollow. However, Terry Brown, a representative of the Department of Conservation and Recreation, offered clarification of Mr. Brickley's letter in testimony proffered after the letter was filed. Taken together, the letter and the testimony advise the Commission of the sensitive nature of the karst areas in Skydusky Hollow and other areas potentially impacted by the route of the Jackson's Ferry Project. The letter and the testimony also identify measures to mitigate and to avoid damage which the Commission has considered.

- *Air Quality*

In the Report, the Examiner reviewed the record developed on air pollution in this proceeding.[43] In its Comments at 3-4,

[43] Id. at 37-38.

the Company requested that the Commission find, based on the testimony and exhibits of Staff Witness William T. Lough, that the proposed transmission line project would have a negligible impact on air emissions. We will not grant this request. It is not necessary for the Commission to make the finding requested by the Company.

- *The Appalachian Trail*

The Appalachian Trail ("Trail") is a natural and recreational resource of great importance to Virginia and the nation. The Appalachian Trail is important to all who walk it, whether for short distances, or its entire length. Also, as the record demonstrates, the localities crossed by the Trail and the communities near it are keenly aware of the economic benefits of associated tourism and recreational activities. The Trail also enjoys substantial federal protection, and these federal concerns must be taken into account.

Company witnesses, KEMA, and representatives of the Appalachian Trail Conference and the Roanoke Appalachian Trail Club addressed the impact of a proposed line on the Trail. There was agreement among these witnesses that routing the Jackson's Ferry line to take advantage of a relocation of the Trail's crossing of US I-77 in Bland County would minimize the line's impact. Relocation of the Trail's crossing of the interstate highway has been planned for some years. Members of the Commission walked segments of the Appalachian Trail near the proposed crossing when the trees were bare. The transmission

line can be routed to cross the Trail in the vicinity of the relocated crossing of the interstate. Thus, the transmission line and the interstate highway would intrude on the same relatively short segment of the Trail.

APPAL contends, in its Comments at 4 and 8, that the Examiner gave undue weight to the views of the Conference and the Roanoke Club on upgrading the existing Kanawha River-Matt Funk 345 kV transmission line or constructing a parallel line. The record does not support this contention. The existing 345 kV line is visible along several segments of the Trail, and upgrading or paralleling it would have a major impact on the Trail. In addition, the existing line is near homes and other development in many areas. Upgrading the line or paralleling it would have significant impacts. Further, this 345 kV line crosses the New River at a point in West Virginia now protected as a federal scenic river. Expanding that crossing does not appear viable. Modifying the existing Kanawha River-Matt Funk line is not an acceptable solution from either a need or an environmental perspective.

- *New River Crossing*

Among the particularly sensitive segments of a Wyoming-Cloverdale line or a Wyoming-Jackson's Ferry line are the New River crossings. The Hearing Examiner discussed these crossings in the Report.[44] Members of the Commission also viewed the

[44] Id. at 28, 31-32.

proposed crossings. While the line to the Jackson's Ferry Station would cross the New River and the New River Trail State Park, there are several opportunities to mask its intrusion that are not available at the preferred crossing for a line to the Cloverdale Station. As the Examiner found, a bend in the river and intervening slopes would block a view of the line to the Jackson's Ferry Station from many points. A series of rapids would also appear to mask noise from the line. The routing modification, described in the Report at 34, improves the crossing by avoiding impacts on the western side of the river and adding height to the crossing. None of the three crossings identified for the preferred or alternative routes to the Cloverdale Station offered similar opportunities for mitigation. As with other aspects of the Jackson's Ferry route, the New River crossing makes that route, on balance, the best choice for minimizing or avoiding adverse environmental impact.

- *Karst Areas*

The unique features of areas of karst and the plants and animals found in these areas are, collectively, a major environmental asset. The Company, KEMA, representatives of state environmental agencies, and protestants contributed information and opinions upon which the Commission has based its decision. Given the broad distribution of karst features in western Virginia, it would be nearly impossible to construct a transmission line extending more than a short distance without encountering these features. As noted in the Report, both the

Cloverdale Project and the Jackson's Ferry Project would cross karst, and both proposed routes would cross areas that the Virginia Department of Conservation and Recreation recognizes as having particular significance.[45]

The Examiner found, and we agree, that a number of factors warrant approval of the Jackson's Ferry route, which crosses Skydusky Hollow in Bland County.[46] As discussed in the Report, the Jackson's Ferry route, on an overall basis, has less impact on karst because it runs perpendicular to the identified karst areas while the Cloverdale route parallels these features for some distance. In addition, patterns of development and current and projected uses of areas within the George Washington and Jefferson National Forests led to routing through Skydusky Hollow.

The Protestants, in their Comments at 6, contend that the unique features of Skydusky Hollow warrant abandonment of the Jackson's Ferry route and selection of the Cloverdale route. In support of this position, the Protestants cite the letter from Mr. David G. Brickley, Director of the Department of Conservation and Recreation, which has been previously discussed. The information and recommendations in the letter must be considered with the testimony presented at the hearing.

The Protestants, in their Comments at 8-9 and Appendix A to the Comments, also offer their expert's views on Skydusky Hollow

[45] Id. at 27, 30-31, 38-39.

[46] Id. at 26-27.

and the need to avoid any disturbance. The hearing process produced an extensive record on the features of Skydusky Hollow. Members of the Commission have driven extensively through the area and walked in portions of Skydusky Hollow. And, one member viewed the hollow from the air. The combination of information and views presented by KEMA, the various Company experts, and the Protestants' witnesses William D. Orndorff and Dr. Ernst Kastning provide a broad body of information. While the Company may not have developed some information that the Protestants believe should have been considered, the hearing process corrects any shortcomings. The Commission has considered this record, and we find that it is proper to approve the route through Skydusky Hollow.

The record also established the sensitivity of the area and the need to observe stringent safeguards in constructing and operating the line. The experts also identified measures to avoid or mitigate adverse impacts. In Attachment A (appended to this Order and discussed below), we address mitigation measures in general, and particular mitigation measures for karst areas and Skydusky Hollow.

- *Threatened and Endangered Species*

In constructing and operating the proposed transmission line, AEP-Virginia may encounter plants, insects, birds, and other animals that have been identified and given protection under Virginia and federal law. As noted in the Report and the comments thereto, protected species are concentrated in the

Skydusky Hollow caves. As a threshold matter, the Commission will here repeat the admonition it has given in prior decisions: we expect public service companies to adhere to all statutes and regulations aimed at protecting threatened and endangered species. We also expect the Company to cooperate with all agencies responsible for enforcement of these statutes. In the particular circumstances of this Project, we will expect the Company to undertake more than a minimum effort to comply with the law. When additional measures that exceed the minimum requirements set by other responsible state and federal agencies are recommended by such agencies, we expect AEP-Virginia to implement such measures to the extent practical. If the Company objects to implementing any such measure, the matter shall be referred to the Director of the Division of Energy Regulation ("Director"), and identified in the Company's quarterly report that we are directing the Company to file, as discussed below. The Director will review such measures and direct the Company to implement them, unless the costs significantly exceed the anticipated benefits of implementation.

In Appendix A to their Comments, the Protestants raised several concerns about the protected bats and other species in Skydusky Hollow. Upon consideration of the comments, testimony, and reports from state agencies, we find that there is agreement on the need to provide protection in the hollow. Cooperative efforts are already under way to monitor the bat populations and develop protective measures. As we discuss with regard to mitigation, we expect these cooperative efforts to continue.

- *Health Effects*

As the Hearing Examiner discussed in the Report, many public witnesses expressed concern about the impact of a transmission line on human health. Based upon his review of the evidence, the Examiner concluded that electric and magnetic fields ("EMF") would not cause or contribute to the development of cancer in humans. While it acknowledged in its Comments at 5-6, that it had offered no evidence on the issue, APPAL excepted to the Examiner's findings on this matter.

In the Report, the Examiner discussed the studies concerning the health effects of EMF presented by two of the Company's witnesses who have conducted cancer research for a number of years, as well as other reports from various independent sources reviewing EMF research. The Examiner found that these studies support the conclusion that there is no association between EMF and cancer. He concluded, based on the record, that EMF from the proposed transmission line would not pose a threat to human health or safety.[47]

The record also shows that the design and route of the Jackson's Ferry Project would avoid or minimize human exposure to EMF. To seek to avoid or reduce any adverse impact, the line is routed to avoid homes and workplaces. Much of the route traverses areas with few or no inhabitants. The strength of EMF lessens as distance from the source increases. The width of the

[47] See id. at 34-37.

right-of-way and the height of the conductors assure adequate distance between the source of EMF and homes and businesses. The Company offered to purchase any home that is within 100 feet of the edge of the right-of-way.[48] As a condition of our approval, we will hold the Company to this commitment. The combination of routing, design, and mitigation measures will reduce human exposure to the EMF from this line.

- *Mitigation Measures*

As the Examiner found, Report at 38-40, and 42, AEP-Virginia has committed to observe a variety of mitigation measures in constructing and operating the line. The Company provided summaries of the measures it expects to implement in the application and as attachments to the testimony of several of its witnesses. We will direct implementation of these measures as proposed by the Company or as modified based on the record. After considering the record and the Company's Comments, we will address some specific issues concerning vegetation control.

Generally, with respect to mitigation measures, the Commission will assign particular responsibilities to the Staff for monitoring the construction of the transmission line. Upon completion of the Final Design described in Guideline 5 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way and Structures," AEP-Virginia

[48] Tr. at 3684-3686.

will confer with the Commission Staff on the placement of supporting structures. Supporting structures will be placed so that they, to the extent possible, reduce or eliminate adverse environmental and visual impacts. The Commission Staff will approve the placement of supporting structures to seek to assure that views are preserved, to the extent practical.

The Company will cooperate with state environmental agencies and our Staff in placing supporting structures, particularly in karst areas. When additional measures, which exceed the minimum effort necessary to comply with the law and regulations, are identified by the agencies, we expect the Company to implement these measures to the extent practical. If AEP-Virginia objects to implementing a measure, the matter shall be referred to the Director of the Division of Energy Regulation, and identified in the quarterly report filed with the Commission. The Director will review such measures and direct the Company to implement them, unless the costs significantly exceed the anticipated benefits of implementation.

In its Comments at 5-6, the Company requested clarification regarding precautions it is required to take in applying herbicides when precipitation threatens. Herbicides are not to be applied when rain is falling or imminent, or within one day of rainfall that results in soil moisture capacity above field capacity. Further, wick/wand application of herbicides is not required. There may be leakage of herbicides from the equipment, and this method has not been shown to be economical for maintaining rights-of-way.

With regard to right-of-way clearing and maintenance in karst areas, special measures are required. The record includes extensive discussions of the impact of herbicide application in karst areas and the impact on groundwater. A Company witness acknowledged that the right-of-way could be cleared and maintained with chain saws and other tools.[49] Given the many concerns with herbicides and their application raised on the record, we direct the Company not to use herbicides, regardless of the method of application, in karst areas. We recognize that this mitigation measure may increase costs, but we find that the additional expenditure to protect the environment is warranted.

Motions to Reopen the Record

The Commentors[50] moved on February 26, 2001, to supplement the record in this proceeding. They requested that a letter advising of the Greater Newport Historic District's addition to the National Register of Historic Places be accepted as an exhibit. We will deny this motion. We find that the record before the Commission adequately establishes the historic significance of Newport.

On March 6, 2001, the Protestants and APPAL (collectively, "Petitioners") jointly filed a Motion to Reopen the Record, or,

[49] See id. at 3715.

[50] As discussed supra, the Commentors are comprised of Giles County Board of Supervisors, Citizens Organized for the Preservation of the Environment of Giles County, and the Greater Newport Historic District Committee.

in the Alternative, to Deny the Application ("Motion").[51] The Petitioners assert that there are serious shortcomings in the Company's computer modeling, because the modeling did not include the effect of projected non-Company generation that could eliminate the need to construct a 765 kV transmission line. The Petitioners request that the Commission reopen the record for the purpose of receiving additional evidence relative to the planned capacity, or, in the alternative, deny the Company's application.

Subsequently, the Commission entered an order providing an opportunity for the Company, Staff, and parties to respond to the Motion, and for the Petitioners to reply to any responses that may be filed.

AEP-Virginia filed a response contending that the testimony of certain witnesses shows that the evidence in the existing record amply demonstrates that most of the new generation projects cited by the Petitioners are in varying stages of planning or development. The Company also stated that even if applications for these projects were to be filed and approved, these projects would not offer a long-term solution for the needs of southwestern Virginia. Moreover, the Company argues, the Petitioners fail to take into account the practical

[51] As stated above, the Protestants are comprised of the Board of Supervisors of Bland County and Citizens United to Protect Tazewell County, and APPAL is the defined term for the Alliance for the Preservation and Protection of Appalachian Land, Inc.

difficulties associated with relying on non-Company generation as a substitute for a transmission line.

The Petitioners filed a reply, stating that their point was not that the new projects could, on a stand-alone basis, eliminate the need for the proposed line. Rather, the Petitioners were demonstrating that information was available to the Company when it prepared its application that would have provided a fairer analysis of the need for a 765 kV transmission line.

We deny the Petitioners' Motion. Even assuming the Petitioners are correct that all of the information they cite was available to the Company when it prepared its computer modeling, and the Company did not include that information, the concept of including non-Company generation as an alternative or part of an alternative was considered. As discussed earlier, the construction of new generating resources in southwest Virginia does not, in and of itself, eliminate the need for a 765 kV transmission line. The risks associated with the correct placement and sizing of units, and the risk that the Company may not be able to obtain the rights it would need, are simply too great.[52]

Accordingly, IT IS ORDERED THAT:

(1) As provided by §§ 56-265.2, 56-46.1, and related provisions of Title 56 of the Code of Virginia, AEP-Virginia's application for certificates of public convenience and necessity

[52] See Ex. CDW-6 at 10-11.

to construct a 765 kV transmission line is granted as set forth in this Order, and otherwise is denied.

(2) AEP-Virginia is authorized to construct and operate a 765 kV transmission line from its Wyoming Station, near Oceana, West Virginia to its Jackson's Ferry Station as provided in this Order. The corridor for the line shall be the route recommended by the Hearing Examiner.

(3) The Motion filed on February 26, 2001, by Giles County Board of Supervisors, Citizens Organized for the Preservation of the Environment of Giles County, and Greater Newport Historic District Committee, and the Motion filed on March 6, 2001, by Bland County Board of Supervisors, Alliance for the Preservation and Protections of Appalachian Land, Inc., and Citizens United to Protect Tazewell County, Inc., are denied for the reasons discussed herein.

(4) Forthwith upon receipt of this Order, AEP-Virginia shall file with the Commission's Division of Energy Regulation three (3) copies of the Virginia Department of Transportation's "General Highway Map" of each county in which the 765 kV transmission line approved in this Order will be constructed. The maps shall show the approved line and previously constructed facilities. The maps shall show the boundary between the service territories of AEP-Virginia and other electric utilities with service territories certificated by the Commission. Each map must show the approved line in another electric utility's certificated service territory, and must be signed by a representative of the other utility stating that the utility

does not oppose the construction of the facility authorized by this Order.

(5) As provided by §§ 56-265.2, 56-46.1, and related provisions of Title 56 of the Code of Virginia, AEP-Virginia's application for a certificate of public convenience and necessity to construct a 500 kV bus extension at its Cloverdale Station is granted.

(6) Pursuant to the Utility Facilities Act, Chapter 10.1 (§§ 56-265.1 et seq.) of Title 56 of the Code of Virginia, AEP-Virginia is issued the following certificates of public convenience and necessity:

(a) Botetourt County:

Certificate No. ET-28k which authorizes AEP-Virginia under the Utility Facilities Act to operate presently constructed transmission lines and facilities in the County of Botetout, all as shown on the detailed maps attached, and to construct and operate facilities as authorized in Case No. PUE970766; Certificate No. ET-28k will cancel Certificate No. ET-28j issued to AEP-Virginia on January 14, 1974.

(b) Bland County:

Certificate No. ET-27c which authorizes AEP-Virginia under the Utility Facilities Act to operate presently constructed transmission lines and facilities in the County of Bland, all as shown on the detailed maps attached, and to construct and operate facilities as authorized in Case No. PUE970766; Certificate No. ET-27c will cancel Certificate No. ET-27b issued to AEP-Virginia on January 13, 1971.

(c) Tazewell County:

Certificate No. ET-48d which authorizes AEP-Virginia under the Utility Facilities Act to operate presently constructed transmission lines and facilities in the County of Tazewell, all as shown on the detailed maps attached, and to construct and operate facilities as authorized in Case No. PUE970766; Certificate No. ET-48d will cancel Certificate No. ET-48c issued to AEP-Virginia on August 24, 1971.

(d) Wythe County:

Certificate No. ET-51e which authorizes AEP-Virginia under the Utility Facilities Act to operate presently constructed transmission lines and facilities in the County of Wythe, all as shown on the detailed maps attached, and to construct and operate facilities as authorized in Case No. PUE970766; Certificate No. ET-51e will cancel Certificate No. ET-51d issued to AEP-Virginia on December 21, 1979.

(e) Pulaski County:

The Commission is aware that the 1,000 ft. corridor is located on the border of Wythe and Pulaski Counties, and the Company is authorized to use only 200 feet of right-of-way for the transmission line that is approved in this Order. If, in its final design of the transmission line, no portion of the transmission line will be constructed within Pulaski County, the following certificate will be revoked.

Certificate No. ET-43e which authorizes AEP-Virginia under the Utility Facilities Act to operate presently constructed transmission lines and facilities in the County of Pulaski, all as shown on the detailed maps attached, and to construct and operate facilities as authorized in Case No. PUE970766; Certificate No. ET-43e will

cancel Certificate No. ET-43d issued to AEP-Virginia on January 13, 1971.

(7) The Commission's Division of Energy Regulation will send a copy of each certificate issued in (6) with attached map to Ronald L. Poff, Supervisor-Transmission Line Engineering, AEP-Virginia, 40 Franklin Road, S.W., Roanoke, Virginia 24011.

(8) In designing, constructing, and operating the 765 kV transmission line approved in this proceeding, AEP-Virginia shall comply with the mitigation measures listed or referenced in Attachment A, which is hereby made part of this Order.

(9) The Commission Staff shall consult with AEP-Virginia and interested state and federal agencies with responsibilities concerning the construction of the transmission line approved in this Order.

(10) The Commission Staff will approve the placement of supporting structures to assure that views are preserved, to the extent practicable.

(11) AEP-Virginia shall use nonreflecting conductors and subdued colors for tower structures.

(12) AEP-Virginia shall use the six-bundle configuration of conductors to reduce noise.

(13) AEP-Virginia shall offer to purchase any home that is located within 100 feet of the edge of the right-of-way.

(14) Case No. PUE010245, In the Matter of AEP-Virginia: the Oversight of the Design, Siting, Construction, and Operation of the Wyoming-Jackson's Ferry 765 kV Transmission Line, will be established for receipt of reports ordered in Ordering

Paragraph(15) below and other filings pertaining to the transmission line approved in this Order. The instant case shall be dismissed from the Commission's docket of active proceedings, and the papers filed herein shall be placed in the Commission's file for ended causes.

(15) Beginning October 1, 2001, continuing on the first day of each successive quarter until the line is in operation, AEP-Virginia shall file with the Clerk of the Commission a report on the progress of construction of the transmission line approved in this Order, and shall serve a copy on the Director of the Division of Energy Regulation.

CASE NO. PUE970766
ORDER GRANTING AUTHORITY TO CONSTRUCT
TRANSMISSION FACILITIES

ATTACHMENT A

MITIGATION MEASURES
WYOMING-JACKSON'S FERRY 765 kV TRANSMISSION LINE

I. General

A. AEP-Virginia will implement the general and specific mitigation measures for natural resources listed in Application Volume XI, at 36-48, except as modified by measures identified in this Attachment A, Mitigation Measures.

B. AEP-Virginia will consider Natural Heritage Resources designated by the Department of Conservation and Recreation, Division of Natural Heritage and avoid impacting these resources wherever possible. Where impacts cannot be avoided, AEP-Virginia will consult with the Division of Natural Heritage on protective and remedial measures.

C. If there is significant bird mortality due to collisions with the line, AEP-Virginia will, in consultation with appropriate state and federal agencies, make site-specific studies to determine the extent of the problem. These studies will be conducted at the times of year recommended by the state and federal agencies. If warranted by the studies, AEP-Virginia will, in consultation with the state and federal agencies, develop and implement a mitigation plan to reduce bird collisions.

D. AEP-Virginia shall comply with all requirements of law, and, to the extent practicable, additional measures that exceed the minimum requirements of responsible state and federal agencies that are recommended by such agency, but not required by law. Should AEP-Virginia object to implementing any such measure, the matter shall be referred to the Director of the Division of Energy Regulation ("Director"), and identified in the quarterly report filed with the Commission. The Director will review such measures and direct the Company to implement them, unless the costs significantly exceed the anticipated benefits of implementation.

II. Cultural Resources

A. AEP-Virginia will implement the specific mitigation measures listed in Application Volume XI, at 62-63, 65-66, 73-76, 82-84, and 88-89, unless modified by measures identified in this Attachment A, Mitigation Measures, for the route approved in this Order. AEP-Virginia will develop and implement appropriate specific mitigation measures for the five modifications in the routing recommended by the Hearing Examiner in his Report and approved in this Order.

B. AEP-Virginia will implement the "General Mitigation Measures for Cultural Resources" listed in Application Volume XIII, at 13-38, unless modified by measures identified in this Attachment A, Mitigation Measures.

C. Paragraph C 4 of the "General Mitigation Measures for Cultural Resources", Application Volume XIII, at 34, is supplemented as follows:

> *Where a primary residence or a structure used for a business on a daily basis is located within 100 feet of the edge of the right-of-way, the Company shall offer to purchase the structure at 100 percent of fair market value for up to one year after the line is energized. The Company may also consider, but is not required, to purchase the entire parcel of property upon which the primary residence or structure used for a business on a daily basis is located. Notwithstanding these requirements, the Company and the property owner may agree on any other terms for purchase, relocation, or construction of structures.*

D. AEP-Virginia will comply fully with the requirements of the federal National Historic Preservation Act and implementing regulations and administrative guidance. The Company will comply with applicable Virginia statutes, regulations and administrative guidance on preservation of historic resources. AEP-Virginia will enter into a programmatic agreement with the appropriate federal agencies and the Virginia State Historic Preservation Officer.

III. Siting, Line Design, and Construction-General

A. AEP-Virginia will implement the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way and Structures," Schedule 1 to Ex. RLP-56 D, Rebuttal Testimony of Ronald L. Poff, unless modified by

measures identified in this Attachment A, Mitigation Measures. If the Company objects to implementing any of the guidelines, it shall refer the matter to the Commission Staff as detailed in Section I (D) of this Attachment.

B. "Sensitive environmental features" as used in Guideline 2, Corridor Inventory, of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way Structures," will include Natural Heritage Resources identified by the Department of Conservation and Recreation, Division of Natural Heritage.

C. AEP-Virginia will avoid Natural Heritage Resources wherever possible. The Company will consult with the Division of Natural Heritage when preparing the Corridor Inventory described in Guideline 2 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way Structures," and in subsequent phases so that all Natural Heritage Resources will be identified, considered and protected. The Company will implement all recommended remedial and avoidance measures. If the Company objects to implementing any such measure, it shall refer the matter to the Commission Staff as detailed in Section I (D) of this Attachment.

D. AEP-Virginia will not place towers in riparian areas and wetlands; nor will AEP-Virginia place supporting structures within streambeds or on stream banks.

E. AEP-Virginia will span surface waterways in such a way as to protect vegetative canopy, and the Company will maintain or provide a vegetative buffer at least 50 feet wide for all

water bodies in the right-of-way. The Company will consult with the Commission Staff on appropriate alternative measures if such a buffer is not practical for a particular stream.

F. AEP-Virginia will preserve a 100-foot intact vegetated buffer on cold water (presumably trout) streams. The Company will consult with the Commission Staff on appropriate alternative measures if such a buffer is not practical for a particular stream.

G. AEP-Virginia will identify domestic wells and springs used as drinking water sources within the corridor approved in this proceeding. These drinking water sources will be avoided when possible or adequate protective measures shall be implemented.

H. AEP-Virginia will avoid impacts on old growth timber stands on public and private lands. AEP-Virginia will apply the definition of "old growth timber" adopted by the U.S. Forest Service.

I. AEP-Virginia will preserve viewsheds wherever possible.

J. In developing its Final Design described in Guideline 5 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way and Structures," AEP-Virginia will locate supporting structures on bedrock and avoid subsidence.

K. Upon completion of the Final Design described in Guideline 5 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way and

Structures," AEP-Virginia will confer with the Commission Staff regarding the placement of supporting structures. The Commission Staff shall review the design and the placement of supporting structures to confirm that adverse environmental impacts are avoided wherever possible, and to ensure that supporting structures are placed to preserve views to the extent possible. The Commission Staff shall consult with representatives of the Department of Conservation and Recreation, Division of Natural Heritage, and other interested agencies when reviewing the final design and placement of supporting structures in karst areas.

IV. Right-of Way Clearing and Vegetation Management

A. AEP-Virginia will implement the right-of-way clearing, restoration, and maintenance methods described in Application Volume X, at 2-5, unless modified by measures identified in this Attachment A, Mitigation Measures.

B. AEP-Virginia will implement the "Vegetation Management Specifications" in Application Volume XIII, at 5-11, unless modified by measures identified in this Attachment A, Mitigation Measures.

C "Environmentally sensitive areas" discussed in Section V of the "Vegetation Management Specifications," Application Volume XIII at 11, will include, but not necessarily be limited to, Natural Heritage Resources identified by the Department of Conservation and Recreation, the Division of Natural Heritage, and areas identified as the habitat of a species protected by federal or state law.

D. Herbicides will be applied only on the foliage of targeted plants.

E. Herbicides will not be applied within 200 feet of the edge of streams, the sinks of streams, intermittent streams, ponds, or wetlands.

F. Herbicides will not be applied in karst areas.

G. The downhill side of all windrows will be left open for faunal access.

V. Mitigation in Karst Areas

A. In addition to the mitigation measures in other sections of this Attachment A, Mitigation Measures, AEP-Virginia will implement the measures listed in this section.

B. AEP-Virginia will conduct appropriate studies of karst areas as part of the process of siting, designing, and constructing the transmission line. Specifically:

1. AEP-Virginia will employ experts in karst geomorphology, hydrogeology, groundwater hydraulics, and related disciplines to participate in the siting, line design, and construction of the transmission line.

2. AEP-Virginia will require its experts to conduct appropriate studies of karst areas within the approved corridor to identify caves, cave entrances, swallets, recognizable openings into the subsurface, sinkholes, and other features using accepted scientific and engineering methodologies. These methodologies will include both geotechnical and geophysical investigations. While

conducting these studies, these experts will consult with representatives of Virginia agencies, including, but not limited to, the Virginia Cave Board and the Department of Conservation and Recreation, Division of Natural Heritage, and interested private groups, including the Virginia Speleological Society. These studies will consider information provided by these agencies and groups. The Company will provide copies of studies, maps, surveys, photographs, and any other information collected on karst areas to the Department of Conservation and Recreation, Division of Natural Heritage.

3. After completion of construction of the transmission line through a karst area, AEP-Virginia experts will restudy the area to identify changes caused by construction or other related events. The results of these additional studies will be provided to the Department of Conservation and Recreation, Division of Natural Heritage.

C. Upon completion of the "clearing plan" described in Guideline 7 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way and Structures," but before right-of-way clearing commences, AEP-Virginia will confer with the Commission Staff on portions of the plan for karst areas. The Commission Staff will consult with representatives of the Department of Conservation and Recreation, Division of Natural Heritage, and other interested agencies when reviewing the portions of the clearing plan for karst areas.

D. In consultation with representatives of Virginia agencies, including, but not limited to, the Virginia Cave Board and the Department of Conservation and Recreation, Division of Natural Heritage, AEP-Virginia will develop a protocol for dealing with caves first identified during construction, and remediation of any adverse impacts on the caves.

E. AEP-Virginia will not place slash in cave entrances or springs.

F. AEP-Virginia will maintain a 200-foot vegetative buffer around sinkholes and cave entrances.

G. Herbicides will not be applied in karst areas.

VI. Threatened and Endangered Species and Species of Concern

A. AEP-Virginia will comply with all federal and state statutes and regulations protecting threatened and endangered species, including species that are proposed for listing as threatened or endangered candidates. The Company will cooperate with all agencies responsible for enforcement of these statutes and will implement remedial or avoidance measures recommended, but not required, by such agencies. If the Company objects to implementing any such measure, it shall refer the matter to the Commission Staff as detailed in Section I (D) of this Attachment.

B. AEP-Virginia will consult with responsible federal and state agencies to identify species inhabiting the corridor approved in this Order, which have not been designated as threatened or endangered under state or federal law, but are

species of concern. In siting, designing, and constructing the transmission line, the Company will include these species in its Corridor Inventory described in Guideline 2 of the "Guidelines for Siting, Line Design and Construction of 765 kV Transmission Line Right-of-Way Structures."

C. With respect to threatened and endangered species and species of concern in karst areas and Skydusky Hollow:

1. AEP-Virginia will employ experts in threatened and endangered species and species of concern inhabiting Skydusky Hollow and other karst areas where caves, or other subsurface entryways have been identified or where these features could reasonably be expected. The Company will require the experts to conduct appropriate studies of these areas during the siting, line design, and construction processes to implement Section V., Subsection B of these Mitigation Measures. The Company will require the experts to consult with federal and state agencies throughout the design, siting, and construction process. The Company will implement the remedial and avoidance measures recommended by its experts. If the Company objects to implementing any such measure, it shall refer the matter to the Commission Staff as detailed in Section I (D) of this Attachment. Copies of studies and information collected shall be provided to the state and federal agencies.

2. AEP-Virginia will employ an expert or experts on all species of bats inhabiting Skydusky Hollow. Specifically:

a. AEP-Virginia's experts will conduct appropriate studies and collect data on all species of bats in Skydusky Hollow that might be affected by the construction and operation of the transmission line. The boundaries of the study area will be determined by the presence of bat populations and will not be limited to the corridor approved in this Order. Appropriate studies shall be made during hibernation, summer activity, and fall swarming. Stygobiotic habitats shall be identified for special consideration in the siting, line design, and construction process. In conjunction with the studies required in Section V, Subsection B of these Mitigation Measures, a hydrogeologist shall determine water flows and potential disturbance to the karst system around hibernacula occupied by bats.

b. AEP-Virginia will require its experts, in consultation with all appropriate federal and state agencies, to prepare a resource protection, mitigation and management plan for all affected bat species prior to completing the final design. Construction within these sensitive areas will not begin until this plan is approved. Company shall collect baseline data for bats prior to construction.

3. If AEP-Virginia is required by federal law to develop and implement a protection, mitigation, and management plan for any species, the requirements of that plan shall control in the event of any conflict with the

measures required by this Attachment A, Mitigation Measures. The requirements of this Attachment A, Mitigation Measures, will control to the extent that they do not conflict with any federal requirements. The requirements of this Attachment A, Mitigation Measures, will apply to any threatened or endangered species or species of concern identified by any federal or state agency that is not covered by a plan required by federal law.